

Teachers' Perceptions of Secondary School Students' Mathematics Guidance and Counselling Needs in Ebonyi State

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ABSTRACT:

Persistent poor performance in mathematics by students has continued to curtail their admission into strategic professional courses at Nigerian colleges of education, polytechnics and universities. Basically, mathematics teachers hold the key information necessary for identifying pertinent guidance and counselling needs related to students' achievement in the subject. Therefore, to facilitate school counsellors' role in providing comprehensive mathematics counselling services to students, this study sought to assess teachers' perceptions of students' mathematics guidance and counselling needs in secondary schools in Ebonyi State. Descriptive survey research design was used for the study. The sample for the study consisted of 120 mathematics teachers drawn from 40 public secondary schools in Ebonyi State. Questionnaires were used to obtain the required data. The findings indicated that secondary school students needed mathematics guidance and counselling services regarding attitude, study habits and test orientation. So, it was recommended among others mathematics teachers should be engaged to regularly give lectures to students concerning attitude, study habits and test orientation in order to enhance students' achievement in mathematics.

Keywords: Teachers' Perceptions, Secondary School Students', Mathematics Guidance and Counselling Needs.

INTRODUCTION

The importance of mathematics education in Nigeria's education system and the nation's technological development cannot be overemphasized. Mathematics education is an instrument for economic, political and scientific development of all nations. [1] noted that wherever a person belongs in a society, he/she utilizes the knowledge of mathematics in one form or the other. Not to speak of a president of a nation, an engineer a businessman, an industrialist, a banker and a financier or a finance minister; a planner or a boss in any parastatal, even labourers have to calculate their wages, make purchases from the market and adjust their expenditure to their income. Whosoever earns and spends uses mathematics. Counting, notation, addition, subtraction, multiplication, division, weighing, measuring, selling, buying and many more are simple and fundamental processes of mathematics which require immense practice. This is why mathematics was considered as one of the most important subject in Nigerian schools. It is in recognition of the usefulness of mathematics that the Federal Government of Nigeria through the [2] made mathematics one of the core subjects to be offered at the pre-primary, primary and post primary levels of education.

In spite of mathematics achievement being fundamental for students' transition from secondary schools to higher institutions in Nigeria, it is very disheartening to note that students' academic achievement in mathematics subjects in both internal

and external examinations has remained consistently poor over the years (WAEC Annual Report 2010-2015). In retrospect, [3] stated that school counsellors and mathematics teachers have the responsibility of developing and motivating students' mathematics study orientation which is positively associated with achievement in the subject. In this case, the school counsellors assist students with career planning which entails aligning career interests with academic achievement and cluster subjects for which mathematics is core [4]. Therefore, career counselling emphasizes students' mathematics achievement which is a prerequisite for most professional courses at universities, polytechnics and colleges of education [5]. [6] stated that careers of interest may evoke intrinsic motivation towards mathematics study because following a career path and attaining career goals could provide students with a strong purpose to study the subject. Besides, to influence optimal mathematics achievement among students, secondary school counsellors facilitate and advocate for a resourceful and conducive study environment. Particularly, the school counsellors deal with the psychological and social aspects of learning which constitute issues of attitude, study habits, motivation, self concept, test preparation, learning environment, discipline, social support and self efficacy among others [7]. This is essential because research suggests that successful psychosocial academic intervention programmes are likely to result into improvement in students' achievement [8].

Indeed, school counsellors may support mathematics teachers by offering specific academic intervention programmes with regard to issues of attitude, organizational skills, study habits, group work, time management and classroom participation among others [9]. Thus, educating school counsellors about areas of contention in the mathematics teaching/learning processes may equip them with a knowledge base upon which comprehensive and appropriate intervention strategies and programmes can be designed. For this reason, mathematics teachers' perceptions of pertinent guidance and counselling needs related to students' study and achievement in the subject are crucial, hence, the rationale for this study.

STATEMENT OF THE PROBLEM

The Chief Examiners' reports of results of our public examinations (WAEC, 2010-2015) had shown markedly a decline in the percentage of passes in mathematics. [10] found that the performance of various levels of students had decelerated over the years especially in mathematics achievement with that of Nigerian children quite remarkable. The success or failure of any academic programme depends largely on the guidance given to students and students' ability to study. The poor achievement of students in Mathematics has been traced to lack of proper guidance on students' negative attitudes, inappropriate study habits and distorted test orientation [11]. Hence, this study is poised to investigate Teachers' Perceptions of Secondary School Students' Mathematics Guidance and Counselling Needs in Ebonyi State, Nigeria.

PURPOSE OF THE STUDY

The purpose of the study was to investigate Teachers' Perceptions of Secondary School Students' Mathematics Guidance and Counselling Needs in Ebonyi State. The study specifically intended to:

1. Determine teachers' perceptions of students' study habits related to mathematics achievement among secondary school students
2. Determine teachers' perceptions of students' attitudes related to mathematics achievement among secondary school students
3. Determine teachers' perceptions of students' test orientation related to mathematics achievement among secondary school students

RESEARCH QUESTIONS

The following research questions guided the study:

1. What are the teachers' perceptions of students' study habits relating to mathematics achievement among secondary school students?

2. What are the teachers' perceptions of students' attitudes relating to mathematics achievement among secondary school students?
3. What are the teachers' perceptions of students' test orientation relating to mathematics achievement among secondary school students?

METHODOLOGY

The descriptive survey research design was employed for this study which explored Teachers' Perceptions of Secondary School Students' Mathematics Guidance and Counselling Needs in Ebonyi state, Nigeria. According to Ali (2006), survey design is a type of design which is mainly for finding, describing and interpreting data collected from sample of a very large population through a representative method in order to find out and describe existing phenomena in the population. This design was considered appropriate because it centres on people, their beliefs, opinion and perception of teachers. Also, where all members of a targeted population could not be reached, a survey design makes it possible for inference on the population to be drawn using the sample. Since no direct manipulation was carried out on the independent and dependent variables respectively in this study because they were already in existence and had already occurred in the life of secondary school students in the zone, the survey design became the most appropriate for the study.

Mathematics teachers from all the secondary schools in Ebonyi State constituted the population of the study. The simple random sampling technique was used to draw the sample for the study. Therefore, 120 respondents (mathematics teachers) were drawn from 40 public secondary schools that have been presenting candidates for external examinations. Relevant information for the study was obtained through the use of the researchers designed instruments tagged "Teachers' Perceptions of Students' Mathematics Guidance and Counselling Needs (TPSMGCN). In all one hundred and twenty (120) questionnaires were produced and distributed.

The instrument was validated by three test experts, one from measurement and evaluation, one from mathematics education and the other from guidance and counselling education. Some necessary adjustments were made on it based on their suggestions before it was finally administered on the sample. The questionnaire was used mainly for classification of different levels of students' mathematics guidance and counselling needs. The classification includes students' study habits and mathematics guidance and counselling needs, students'

attitudes and mathematics guidance and counselling needs and students' test orientation and mathematics guidance and counselling needs.

The questionnaire consisted of 30 items, ten for each component of the students' mathematics guidance and counselling needs. To illicit data from the respondents, the instrument was constructed using the following scale:

1. Strongly Agreed (SA) = 4
2. Agreed (A) = 3

3. Disagreed (D) = 2
4. Strongly Disagreed (SD) = 1

The respondents were free to indicate (✓) in the column against each of the items as it applied to them.

RESULTS

RESEARCH QUESTION 1

What are the teachers' perceptions of students' study habits relating to mathematics achievement among secondary school students?

Table 1: Teachers' perceptions of students' study habits relating to mathematics achievement among secondary school students

S/N	Items	SA	A	D	SD	X	Decision
1	Students seldom solve mathematics problems alone	73	31	10	6	3.43	Accepted
2	Students postpone their mathematics study	67	44	2	7	3.43	Accepted
3	Students rarely consult mathematics teachers	63	39	14	4	2.72	Accepted
4	Students complain that mathematics formulas are complicated	77	18	15	10	3.35	Accepted
5	Rote learning generates stress in mathematics study	44	55	12	9	3.12	Accepted
6	Students' ignorance of prior concepts hinders progress	81	22	11	7	3.49	Accepted
7	Students have no mastery of concepts	60	37	1	22	3.13	Accepted
8	Students do not make their own mathematics notes	42	31	33	14	2.84	Accepted
9	Students effort in studying mathematics is always in vain	7	12	55	56	1.92	Rejected
10	Students tend to avoid participating in mathematics lessons	24	22	34	40	2.25	Rejected

Results on Table 1 showed that all the mathematics teachers either agreed or strongly agreed with the negatively described statements on students' mathematics study habits. Therefore, it can be deduced that students seldom solve mathematics problems alone, postpone their mathematics study, rarely consult mathematics teachers, complain that mathematics formulas are complicated, perceived rote learning to generates stress in mathematics study, are ignorance of prior concepts hinders progress, have no mastery of

concepts and that students do not make their own mathematics notes. Mathematics teachers disagreed that students' effort in studying mathematics is always in vain and that students tend to avoid participating in mathematics lessons.

RESEARCH QUESTION 2

What are the teachers' perceptions of students' attitudes relating to mathematics achievement among secondary school students?

Table 2: Teachers' perceptions of students' attitudes relating to mathematics achievement among secondary school students

S/N	Items	SA	A	D	SD	X	Decision
11	Students fear mathematics as a subject	52	55	10	3	3.30	Accepted
12	Most students complain that mathematics is difficult	78	29	4	9	3.47	Accepted
13	Students display low motivation in mathematics study	44	57	11	8	3.14	Accepted
14	Students are anxious about mathematics study	39	62	12	7	3.11	Accepted
15	Students seem content with low mathematics scores	12	28	44	26	2.05	Rejected
16	Students deliberately miss mathematics lessons	17	16	51	36	2.12	Rejected
17	Some students seem to dislike mathematics discussions	56	48	7	9	3.26	Accepted
18	Students lack the value for mathematics in life	14	11	63	32	2.06	Rejected
19	Students seems to portray low self-esteem about mathematics	55	60	1	4	3.38	Accepted
20	Some students feel they can never perform well in mathematics	79	33	2	6	3.54	Accepted

Results in table 2 showed that mathematics teachers either agreed or strongly agreed with the negatively specified mathematics attitudinal statements. This means that some students fear mathematics as a subject, most students complain that mathematics is difficult, some students display low motivation in mathematics study, some students are anxious about mathematics study, students seem to dislike mathematics discussions, students portray low self-esteem about mathematics, and also students believed they can never perform well in mathematics. However,

all the mathematics teachers disagreed or strongly disagreed that students seem content with low mathematics scores, students deliberately miss mathematics lessons and that students lack the value for mathematics in life.

RESEARCH QUESTION 3

What are the teachers' perceptions of students' test orientation relating to mathematics achievement among secondary school students?

Table 3: Teachers' perceptions of students' test orientation relating to mathematics achievement among secondary school students

S/N	Items	SA	A	D	SD	X	Decision
21	Clear and neat presentation of test item solutions	45	43	22	10	3.03	Accepted
22	Techniques for maximizing test scores are required	51	42	18	9	3.13	Accepted
23	Applying mathematics concepts to test items	38	47	21	14	2.91	Accepted
24	Reducing mathematics test questions	11	29	38	42	2.08	Rejected
25	Proper supervision during mathematics test	55	36	9	20	3.05	Accepted
26	Prioritizing the working out of test items	40	51	8	21	2.92	Accepted
27	Reducing mathematics test anxiety	63	39	10	8	3.31	Accepted
28	Interpreting word problems to students	48	43	20	9	3.08	Accepted
29	Following test instructions	63	57	-	-	3.53	Accepted
30	Proper time management during mathematics test	56	61	3	-	3.44	Accepted

Results in Table 3 indicates that all the mathematics teachers agreed or strongly agreed with all the statements regarding teachers' perceptions of students' test orientation while taking mathematics examinations. Therefore, it appears that students required psychological intervention about issues such as clear and neat presentation of test item solutions, techniques of maximizing the test scores, application of mathematics concepts to test items, proper supervision during mathematics test, prioritizing the working out of test items, reduction of mathematics test anxiety, interpretation of word problems to students, following test instructions and proper time management during mathematics test.

DISCUSSION OF THE RESULTS

Findings of the study revealed that guidance and counselling services are needed to improve students' performance in mathematics. Students study habit improves their academic achievement in mathematics. The finding agrees with [12] who conducted a study to find out the relationship between academic achievement and study habit. The study reported a positive relationship between the two variables. [13] opined that study habit was a pattern of activity that went beyond merely reading for pleasure. It is a well planned and deliberate form of consistency on the part of the student towards the understanding academic subjects. Similarly, [14] in his study habit inventory,

pointed out eight key causes of poor academic achievement among which is study habit.. Study habit problems associated with student's response to home work and assignments; reading and note taking and study period procedure; student's concentration; towards examination and teachers' consultation. The inability to utilize effectively and positively these sources of study problems may stand in the way of effective study and good performance among mathematics students. Moreover, most students hardly make mathematics notes during personal study but instead relied on lesson notes a situation which may have contributed to them rarely reading ahead of the teacher.

While reading ahead of the teacher may facilitate attentiveness and participation during lessons, making personal notes aids memory of concepts, formulae and procedures. Thus, counselling strategies and programmes that inculcate note making skills and techniques of reading ahead of the teacher among students may bring about considerable progress in mathematics study and achievement. Advocacy for teacher's adjustment of instructional techniques may also alleviate some study difficulties and enable students to comprehend and apply mathematical concepts [11].

Attitude towards learning of mathematics determines whether a student will excel in the subject or not [15]. Basically, it appears that the negative mathematics attitudinal attributes exhibited by secondary school students contributed to low achievement in the subject. In particular, the lack of motivation, contentment with low achievement and disregard of mathematics' value in life tend to create an unfavourable classroom learning environment [16]. As a result, seasoned teachers who have all the required mathematics teaching skills may find it difficult negotiating through a lesson with such students. Besides, lack of confidence in mathematics study exemplified by students' notion that mathematics is difficult may have led to development of a mental block thus disinterest in the subject [17].

Apparently, these negative attitudes seem to evolve from factors such as negative beliefs, discouraging talks about the subject, pressure to perform, over demanding tasks, uninteresting lessons and teacher orientation [18]. Hence, in support of mathematics teachers, school counsellors may seek to improve the mathematics classroom environment by working through underlying causal factors in order to change the students' attitude and enhance intrinsic motivation to study the subject. In essence, attitudes tend to shape behaviour [15] and as such, data analysis results indicated that secondary school students displayed inappropriate mathematics study habits. For instance, attitudes like anxiety and lack of motivation in mathematics may have resulted into inappropriate study habits such as procrastination, non-participation in class and resistance in making personal notes.

Consequently, [6] concluded that students were likely to develop knowledge gaps in the subject, hence, lacking in mastery of basic concepts. This finding is in agreement with the view that an understanding of basic arithmetic skills is fundamental for making progress in advanced mathematics study [6]. Technically, school counsellors may intervene by relating to students the importance of conceptual understanding and interrelationship with regard to mathematics study. When students realize that mathematics is a progressive subject which requires mastery of earlier concepts for the understanding of current content, then teacher consultation and peer support or discussion groups may become valuable study resources [15].

The thought of taking a mathematics test causes considerable anxiety especially among students of average and low ability as well as high achievers who are ill prepared for the test [6]. Thus, given the identified negative attitudes and inappropriate

mathematics study habits, it is not surprising that secondary school students portrayed problems with regard to taking mathematics tests. Students' issues with application of concepts, time management, presentation of test item solutions, interpretation of word problems and test anxiety are functions of attitudes and study habits.

CONCLUSION

The study concludes that poor achievement of students in Mathematics is caused by lack of proper guidance on students' negative attitudes, inappropriate study habits and distorted test orientation.

RECOMMENDATIONS

The following recommendations were made based on the results of this study:

- i. Mathematics teacher should be engaged to regularly give lectures to students concerning attitude, study habits and mathematics test orientation particularly on interpretation of test items; recognition of concepts in context; techniques of maximizing test scores; neat and clear presentation of test item solutions; and appropriate use of calculators.
- ii. School counsellors and other education stakeholders should invite subject facilitators to sensitize students on competent test orientation such as understanding of test instructions, choice of optional questions, scoring of test items, test anxiety and optimizing test scores
- iii. School counsellors should psychologically treat the negative attitudes towards mathematics among secondary school students by offering psychotherapy to individuals and groups.
- iv. School counsellors should also facilitating peer counselling sessions, organizing social support groups and inviting motivational speakers for students in mathematics.

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Please read carefully the question that follows and indicate your choice of answer with a tick (✓) in the space provided.

OPTIONS

Strongly Agreed	(SA)	<input type="checkbox"/>
Agreed	(A)	<input type="checkbox"/>
Disagreed	(D)	<input type="checkbox"/>
Strongly Disagreed	(SD)	<input type="checkbox"/>

Research Question 1

What are the teachers' perceptions of students' study habits relating to mathematics achievement among secondary school students?

S/N	Items	SA	A	D	SD
1	Students seldom solve mathematics problems alone	✓			
2	Students postpone their mathematics study		✓		
3	Students rarely consult mathematics teachers		✓		
4	Students complain that mathematics formulas are complicated	✓			
5	Rote learning generates stress in mathematics study	✓			
6	Students' ignorance of prior concepts hinders progress	✓			
7	Students have no mastery of concepts	✓			
8	Students do not make their own mathematics notes		✓		
9	Students effort in studying mathematics is always in vain			✓	
10	Students tend to avoid participating in mathematics lessons				✓

Research Question 2

What are the teachers' perceptions of students' attitudes relating to mathematics achievement among secondary school students?

S/N	Items	SA	A	D	SD
11	Students fear mathematics as a subject	✓			
12	Most students complain that mathematics is difficult	✓			
13	Students display low motivation in mathematics study	✓			
14	Students are anxious about mathematics study	✓			
15	Students seem content with low mathematics scores			✓	
16	Students deliberately miss mathematics lessons		✓		
17	Some students seem to dislike mathematics discussions		✓		
18	Students lack the value for mathematics in life		✓		✓
19	Students seems to portray low self esteem about mathematics	✓			
20	Some students feel they can never perform well in mathematics	✓			

Research Question 3

What are the teachers' perceptions of students' test orientation relating to mathematics achievement among secondary school students?

S/N	Items	SA	A	D	SD
21	Clear and neat presentation of test item solutions	✓			
22	Techniques for maximizing test scores are required	✓			
23	Applying mathematics concepts to test items		✓		
24	Reducing mathematics test questions				✓
25	Proper supervision during mathematics test	✓			
26	Prioritizing the working out of test items		✓		
27	Reducing mathematics test anxiety	✓			
28	Interpreting word problems to students		✓		
29	Following test instructions	✓			
30	Proper time management during mathematics test	✓			

Department of Science Education,
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15th June, 2015

Dear Respondent,

REQUEST TO FILL A QUESTIONNAIRE

We are researchers from the above named Institution carrying out an empirical study on "Teachers' Perceptions of Secondary School Students' Mathematics Guidance and Counselling Needs in Ebonyi State". We intend to elicit from you, dependable and vital information required for the successful completion of this study. Please, respond to the items therein in the questionnaire to the best of your ability.

We promise that your response to the questionnaire will be treated with utmost confidentiality. The research is purely, for academic purpose.

Thanks for your cooperation.

Yours faithfully



Nwigboji Emmanuel/Otubo Francis
(Researchers)